



HEXBEAM MARK IV HD & HEXBEAM MARK IV Light

Ver 01,04.020

HEX-BEAM SP7IDX TECHNOLOGY ANTENNA is a broad band hex antenna operating in PLUG AND PLAY system, its assembly time is 1-1,5h for one person. Its installation doesn't require any additional tuning. Thanks to its small and compact structure its turning requires only a small light rotor. The antenna works properly even when it's installed relatively low over the ground.

Both antennas are equipped with all parts, required for a one, five or six bands beam in range from 6 to 20 meters. The **HEXBEAM SP7IDX TECHNOLOGY** offers mounted on the ground gain for front – to – back huge amplify. The antenna offers the same values as a full size YAGA antenna. Has unique shape: is much smaller, stiffly and makes less noise than typical beams, it is lighter, easier to montage.

Please see its possible assembly methods on:

<http://sp7idx-hexbeam.eu/hexbeam/mounting-suggestion>

- The antennas are tested at 7,3m height with **analyser RigExpert AA-1000 + Keysight E5061B ENA Vector Network Analyzer**
- 24,8 m **AIRCELL 7 + RG400/U HEW-Kabel GmbH Germany Filial Nordic-Örebro-Cable**
- Test connections conducted with transceiver SDR - **Flex Radio System 6600M + EXPERT ELEKTRONICS SunSDR2 DX**
- **PA Team SPE EXPERT 1,3K + 2K**

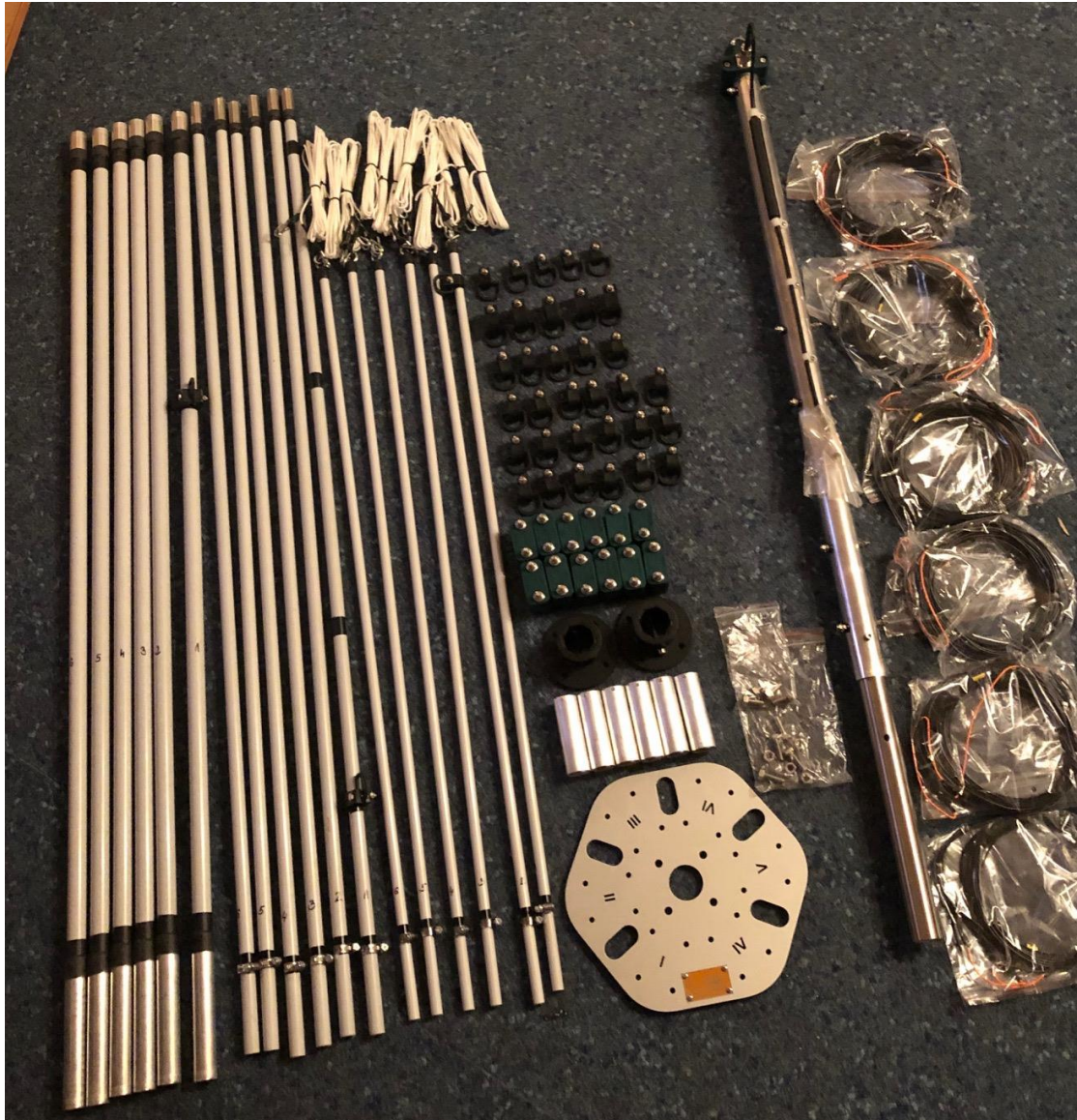
It is helpful if you completely read through the instructions a couple of time before you start.

The antenna is assembled intuitively, but please **READ** the manual carefully.

Please pay special attention to the red inscriptions.

Parcel Arrived





PART LIST

Three types of spreaders (poles)

- 6 pieces - small ones + kevlar lines with S-hooks (6x 1m diameter 12,7mm) #4/8
- 6 pieces - medium (6x 1,35m diameter 17mm) #5/8
- 6 pieces - large (6x 1,35m diameter 22mm) #6/8



**this is not a damage or factory defect - it is only covered with a thin transport foil and can be peeled off it is not a defect!
transport foil is only for transport and may after some time go away do not worry about it!**

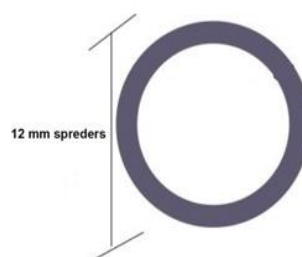


Set of holdres (wire cleat set):

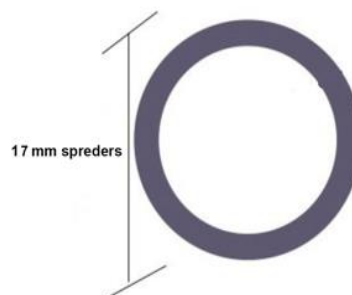
- Size 5 - 6 set
- Size 7 - 24 set
- Size 9 - 6 set
- STORE + Insulating tape - 1 piece - (option) #2/8
- Screw 8 x 20 - 4 pieces for hub clamp on rure with centerpost



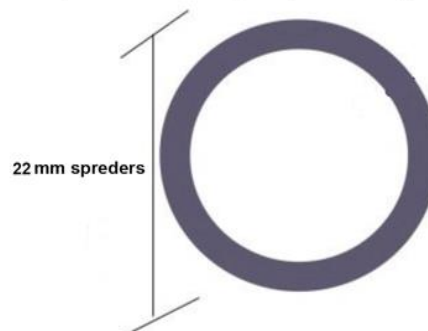
*RUBBER CLAMPS size 12/12 or 11/12 -
6 pieces on small spreaders (poles)*

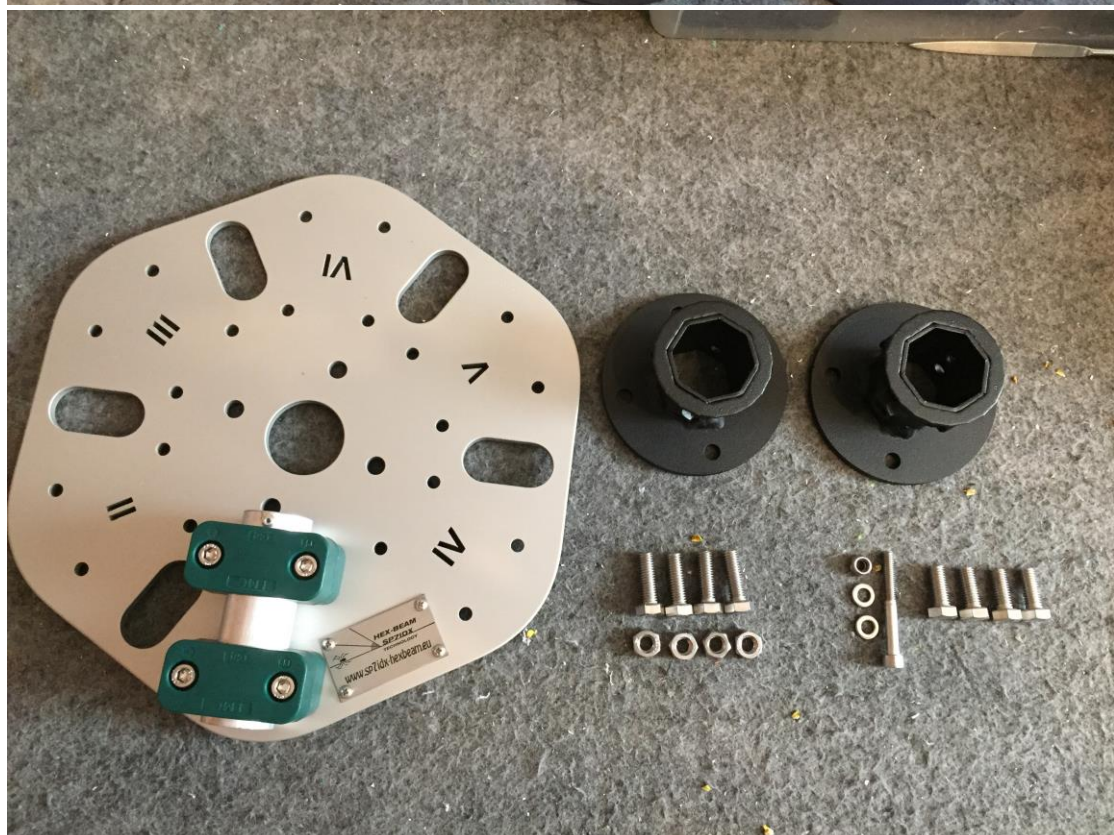


*RUBBER CLAMPS size 16/12
24 pieces on medium spreaders (poles)*



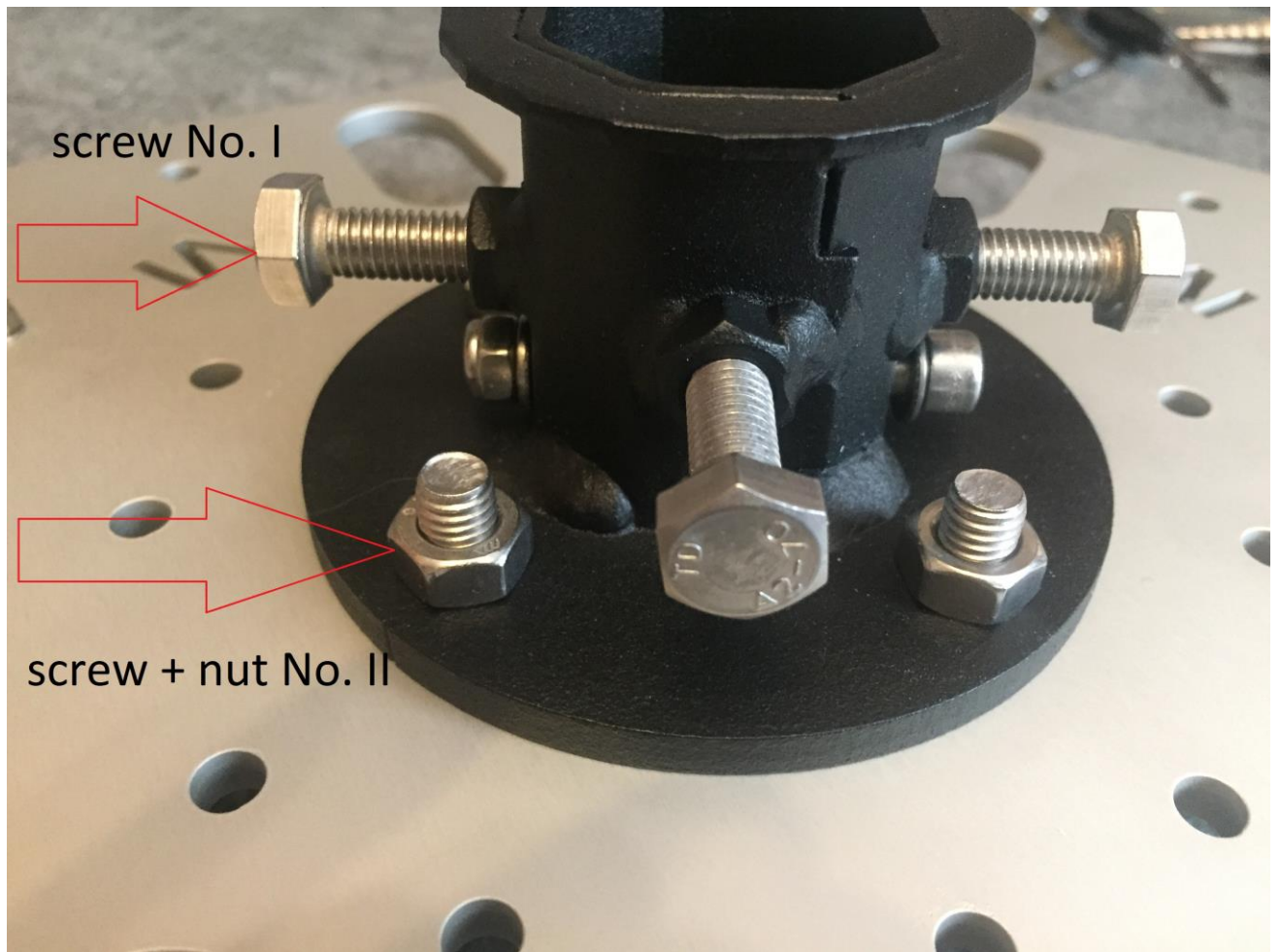
*RUBBER CLAMPS size 20/12
- 6 pieces on large spreaders (poles)*







Down centerhub - mast





6 sets of electric component (driven+reflector+spacer cords)

6-10-12-15-17-20m

#2/8





Center post + balun (option) -1set
#3/8



do not change the position of the screw and do not tighten it !!!

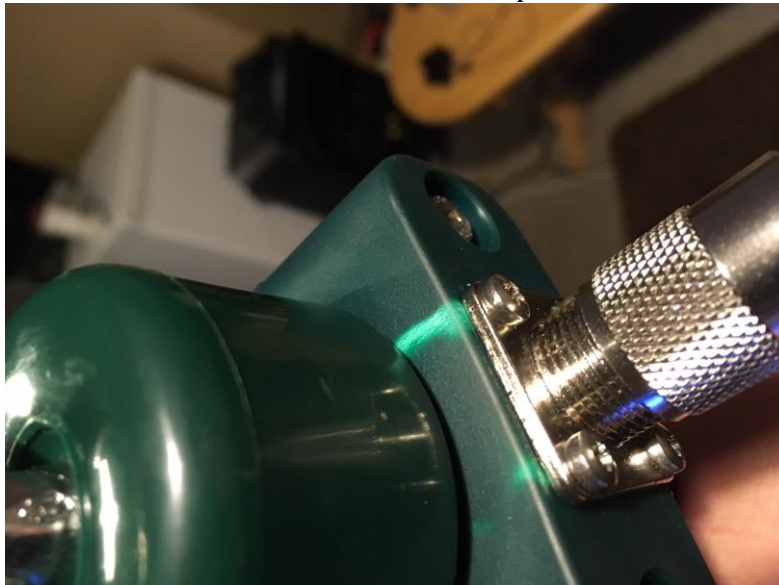


do not change the position of the screw and do not tighten it !!!





Normal situation centerpost

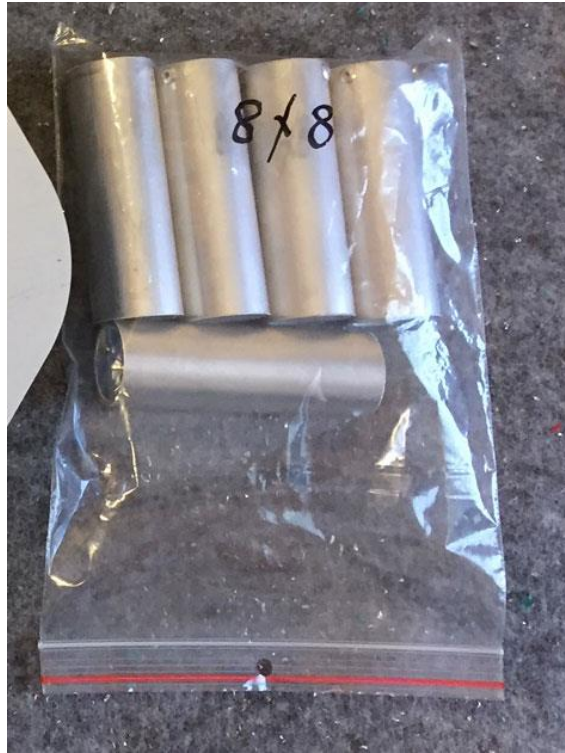


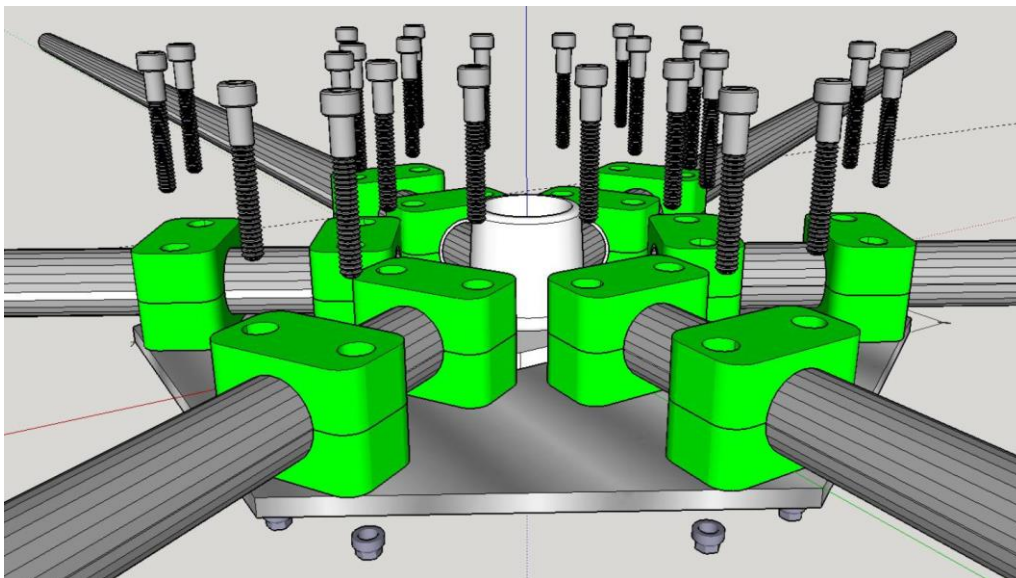
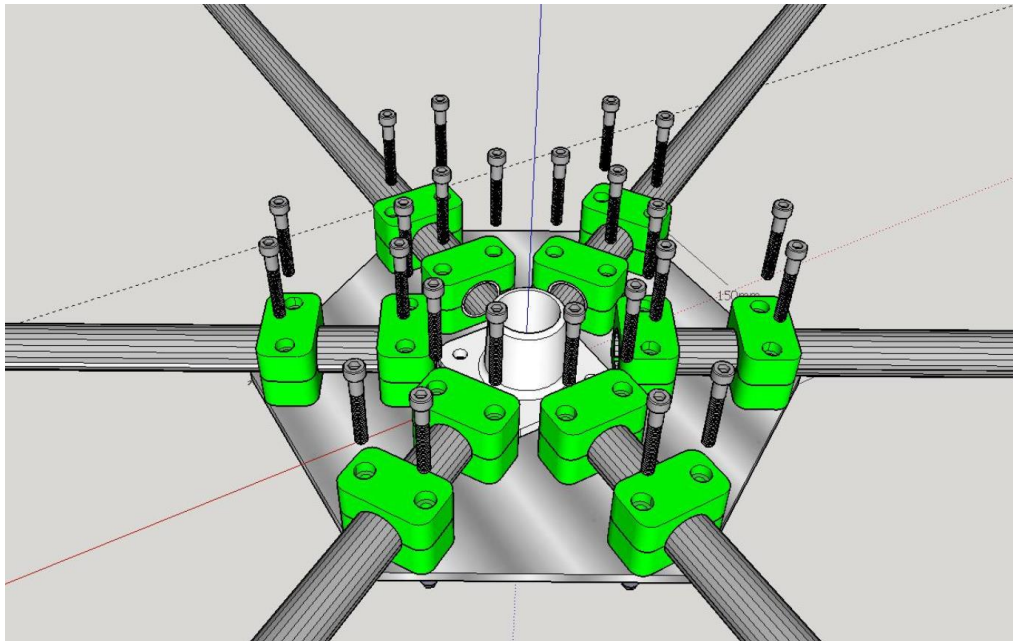
**Center plate-1set
#1/8**

7/8 (or 8/8) polyamide element block clamps 6 set



#8/8 (or 7/8) sleeve 6 art

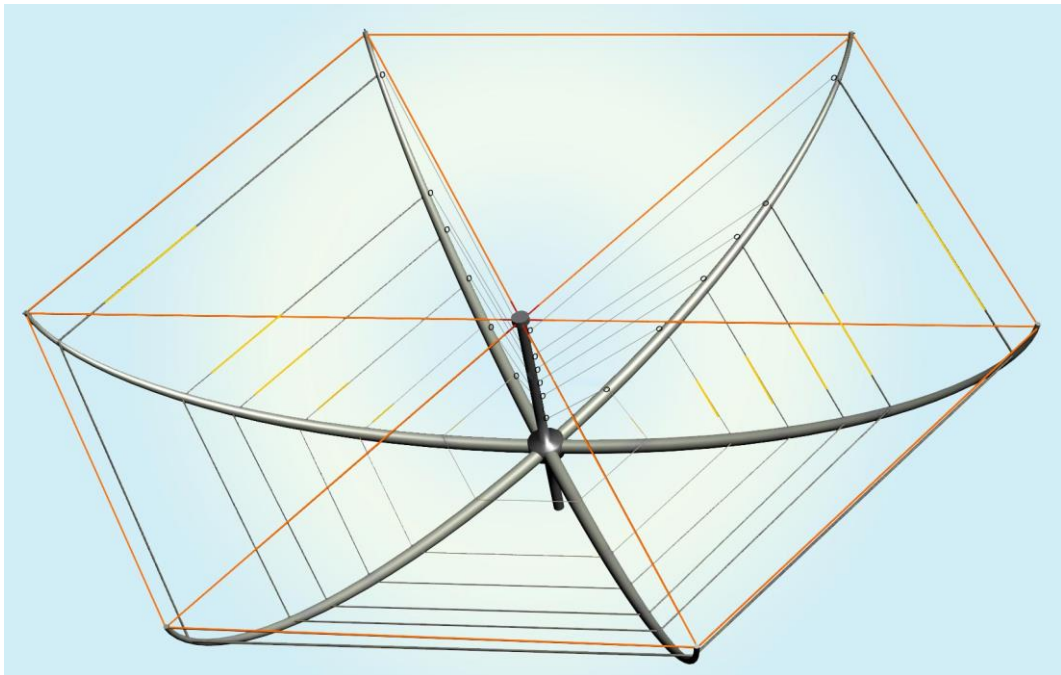


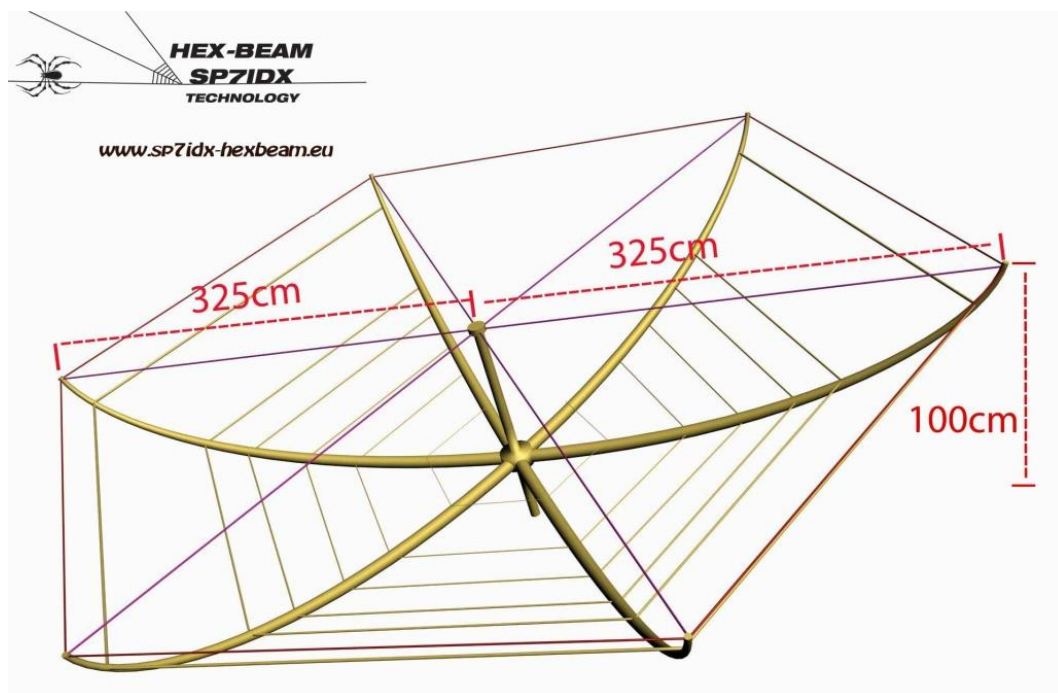
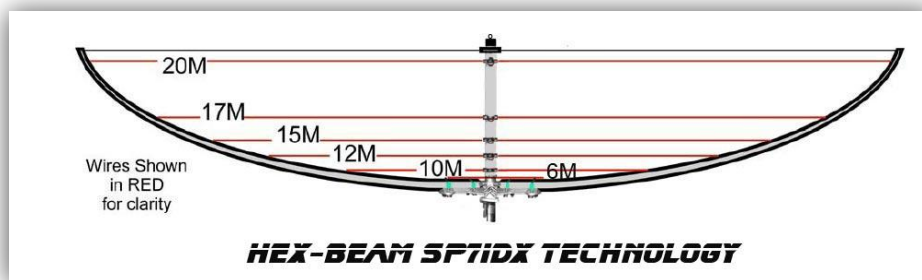
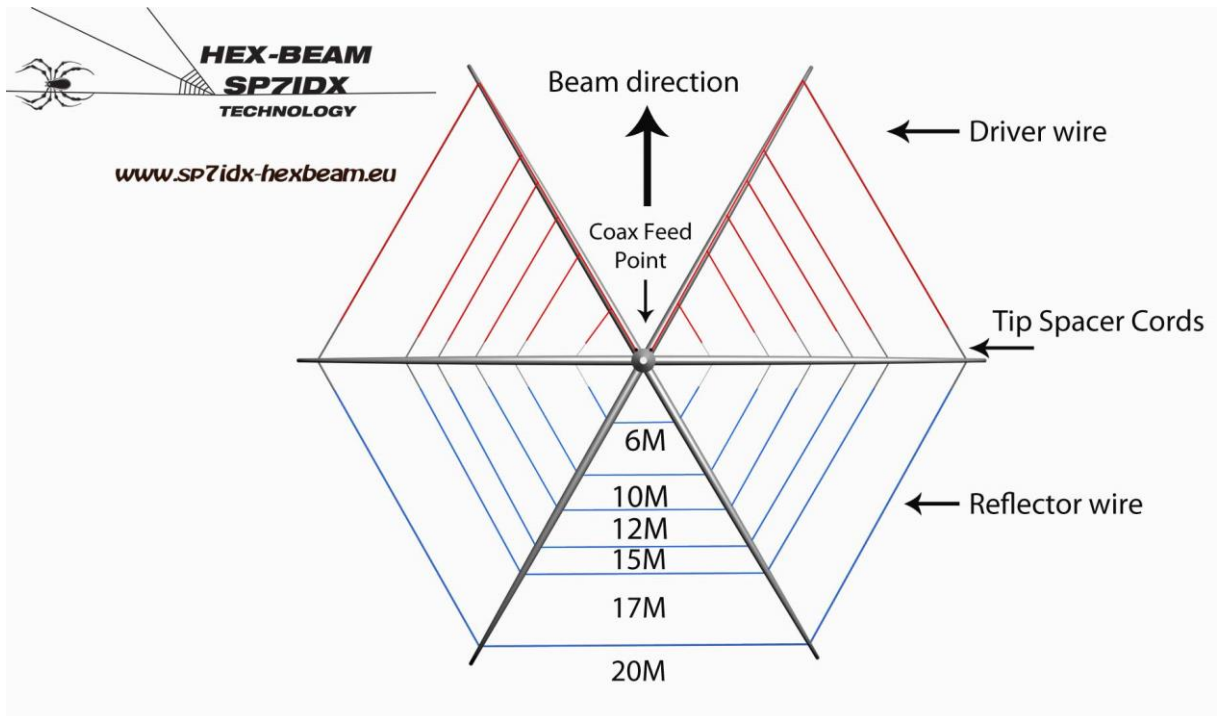


Centerhub complet +centerpost



bottom part centerhub



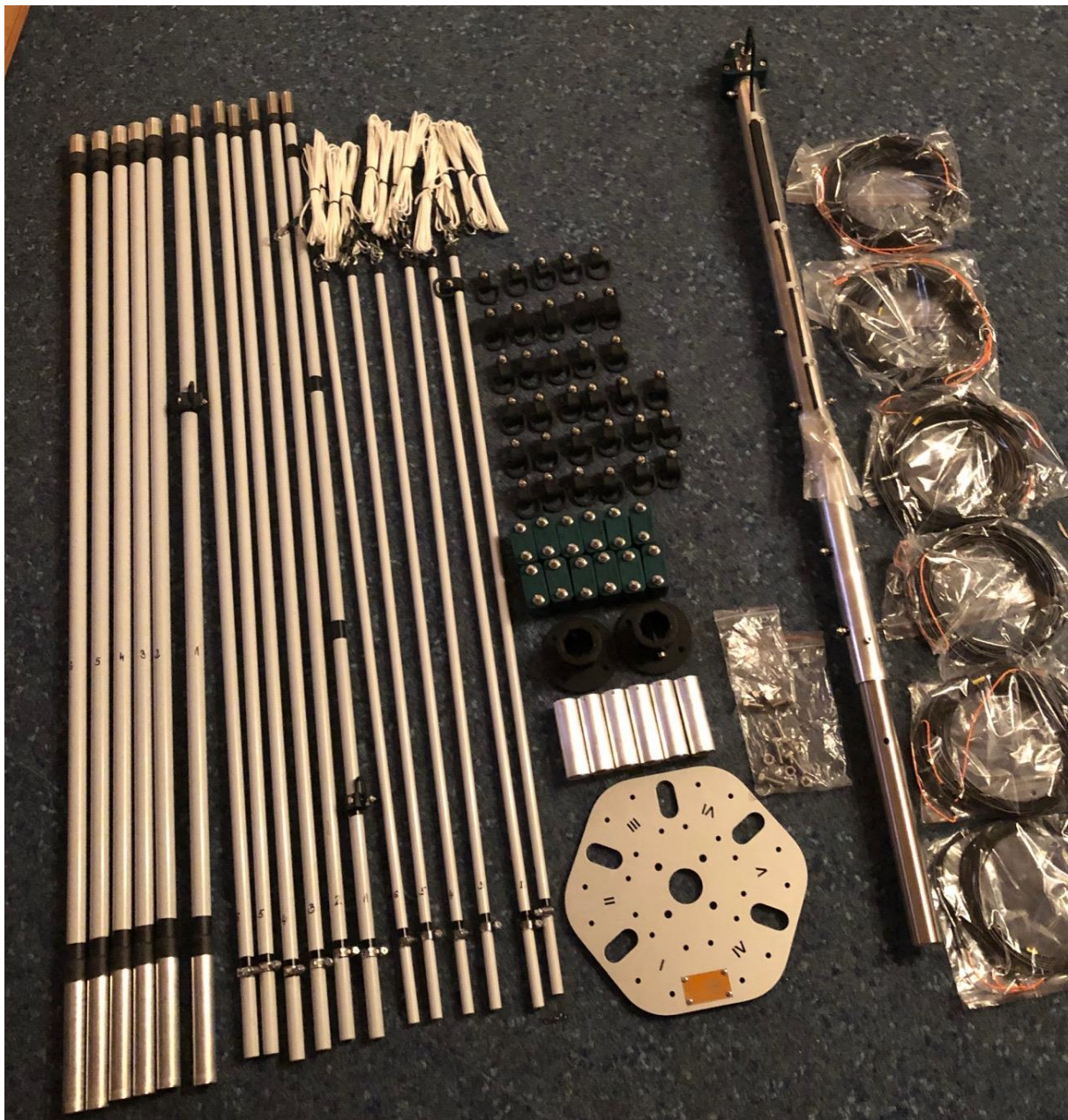


ASSEMBLY INSTRUCTION

Step 1.

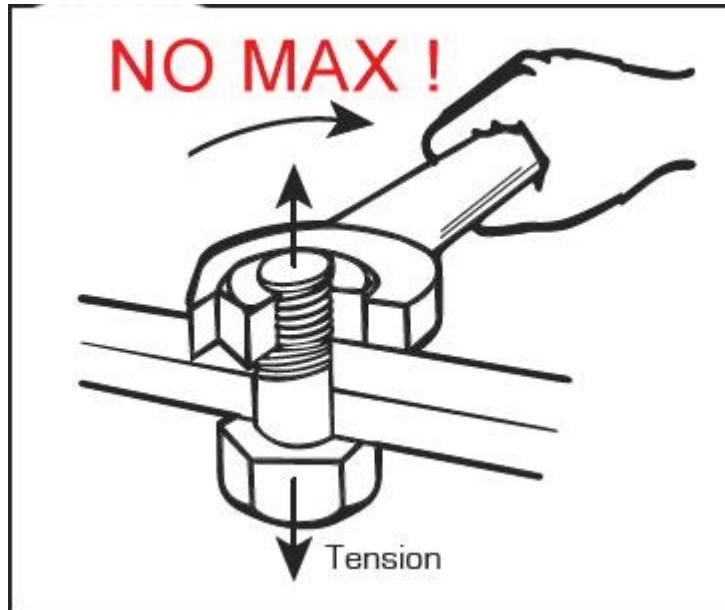
Fix holders on spreaders with 2, 3, 4, 5 and 6 symbols so that they look like on spreaders

no.1



- 6 small poles (1m - 12,7mm) + holders no. 5 - 1 piece per pole
- 6 medium poles (1,4m - 17mm) + holders no. 7 - 4 pieces per pole
- 6 large poles (1,5m - 22mm) + holders no.9 - 1 piece per pole

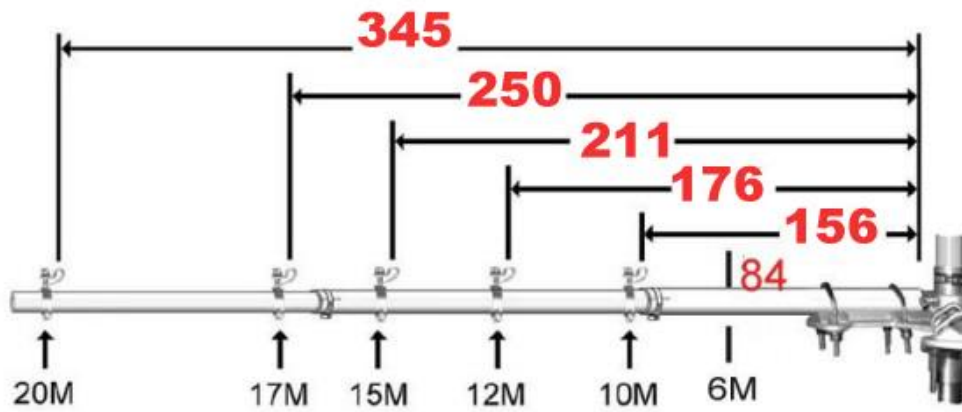
NO MAX !!!



Attention !

correct wire tension adjust with black handle fixing left or right,
Do not tighten the wire too much, The wires should be a little slack
do not screw it tightly, not the wheel from the car !!!
Only minor adjustment is required if any, for proper tension of the wires.
Not to tight, not to much sag of the wires. After all we must realize
that my measurements are estimates too. **Bear in mind that
these are only preliminary clip locations and
when the beam is installed, minor adjustments
might be needed to get the wire tensioned right.**

Typical placement of Wire Guide Clamps



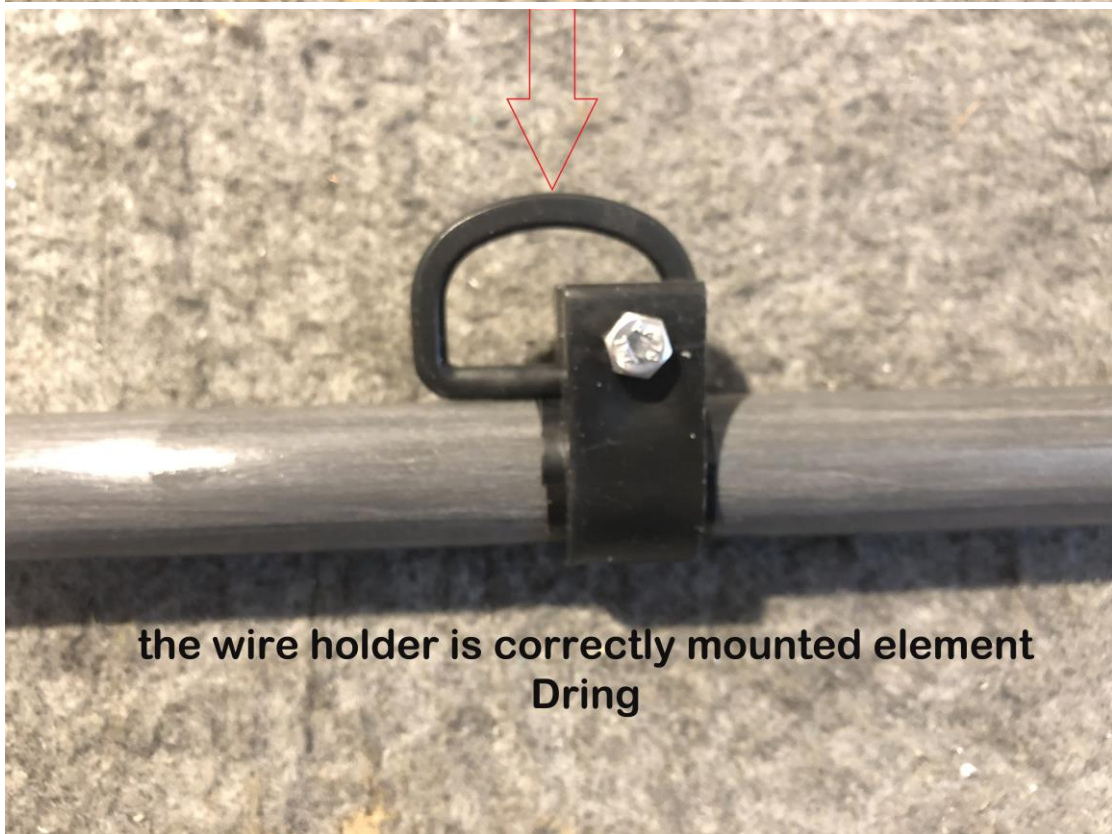
dimension in cm





Attention

**correct wire tension adjust with black handle fixing left or right,
Do not tighten the wire too much, do not screw it tightly, not the wheel
from the car !!!**



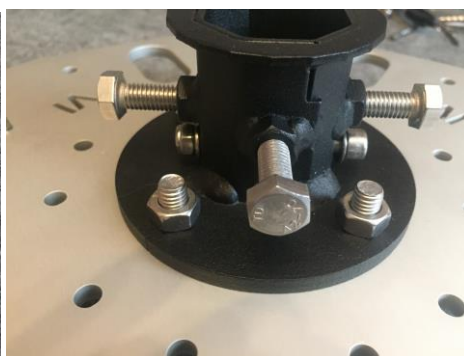






Step 2.

Place the centre post inside the centre plate so that the UC1 socket was facing the log. As an additional protection against the self-turning of the whole structure the upper flange is equipped with an additional passer-by screw - tight it up carefully! Block the centre plate by turning two set screws located in both flanges - upper and bottom one.



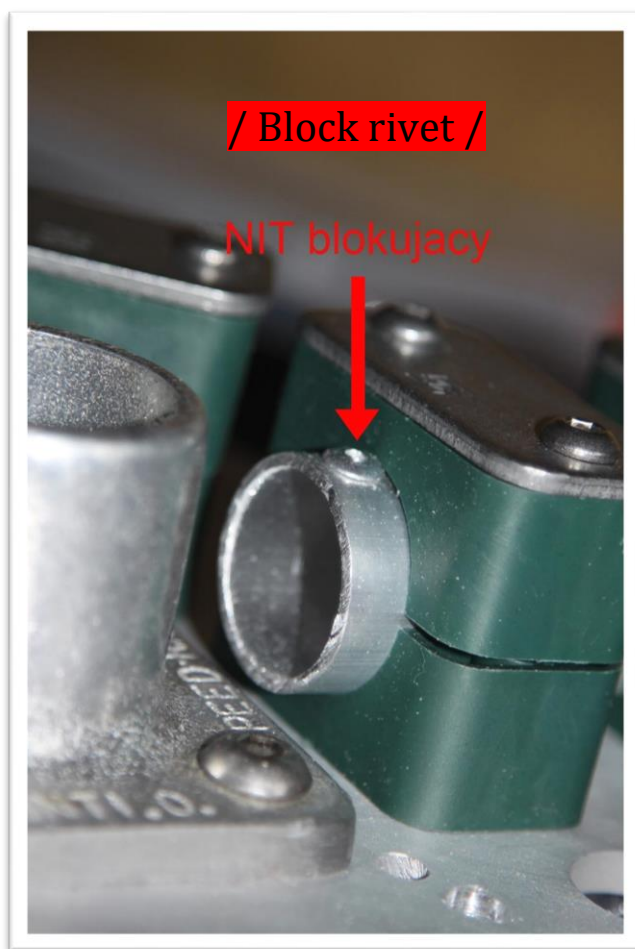


Step 3.

Place the poles in pipes in the centre plate following their numbers on fibreglass spreaders and pipes in the centre plate. Pay attention to places with cut-outs which are inserted into locks in pipes from the centre plate. The poles are marked with numbers and those with the same ones should be stored together. One set of poles includes 3 pieces x no.1, 3 pieces x no.2, etc. up to no.6.











Step 4.

The assembly and tightening of lines.

We start with Kevlar line with S-hook should be fixed in the center post in closed loop. After 6 lines have been fixed in the center post, fasten lines around the perimeter - one to the other - in clockwise direction. The holders for electric components should be faced in inward direction. Perform this action very carefully to avoid the eye injury. The lines put the poles under tension in inward direction! And that's their purpose! They hold the whole structure together, not the electric components.







Step 5.

The fixing of bands should begin with the lowest band, i.e. 6M - which is the closest to the centre post. Then 10M, 12M, 15M, 17M and 20M.

numbers on centerpost and band

1-20m

2-17m

3-15m

4-12m

5-10m

6-6m

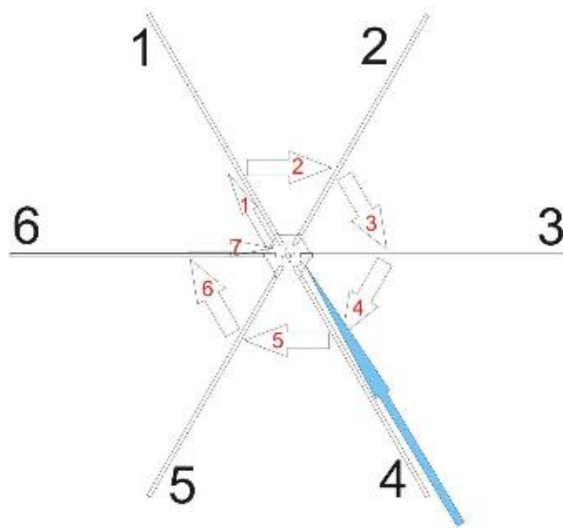
The leads have the same band symbols as the centre post. Fix the closed loop on one side of the lead on screw in centre post, then keep putting it through holders on poles until you reach the second screw in the centre post.

If the lead is too loose or cannot reach the second screw, move the holders on pole upward and downward to correct the distance of the lead.



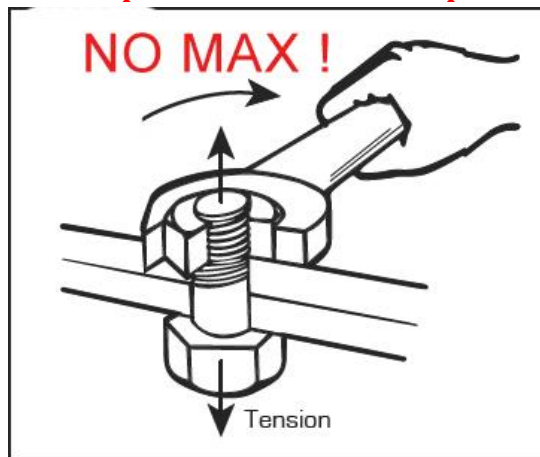
Since each bolt the centerpost is provided with locknuts , do not over!!!!!!

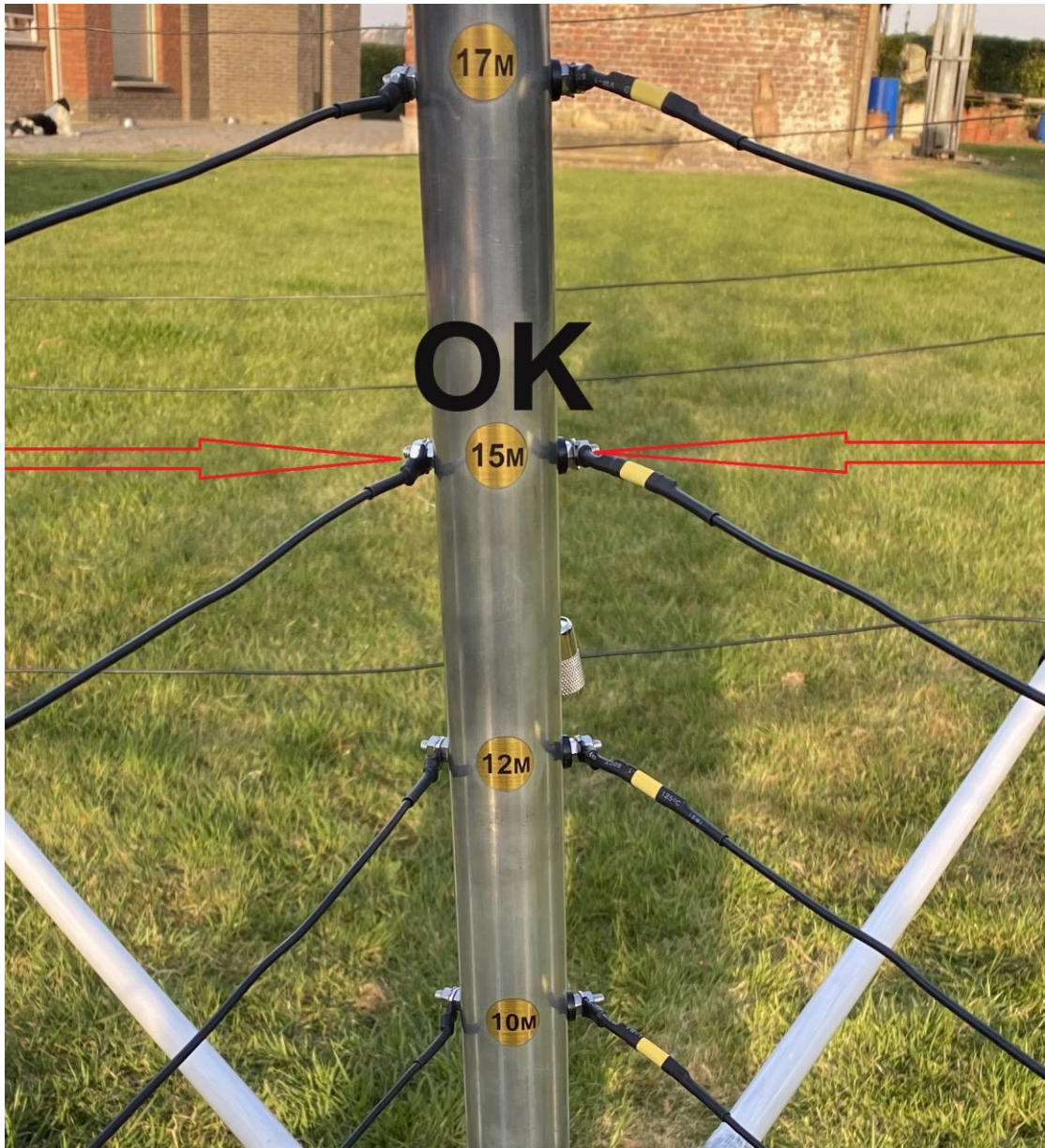
DO NOT over tighten the wires !!!!! . The wires should be a little slack. But you might need to pull a little to get the lugs onto the screws.

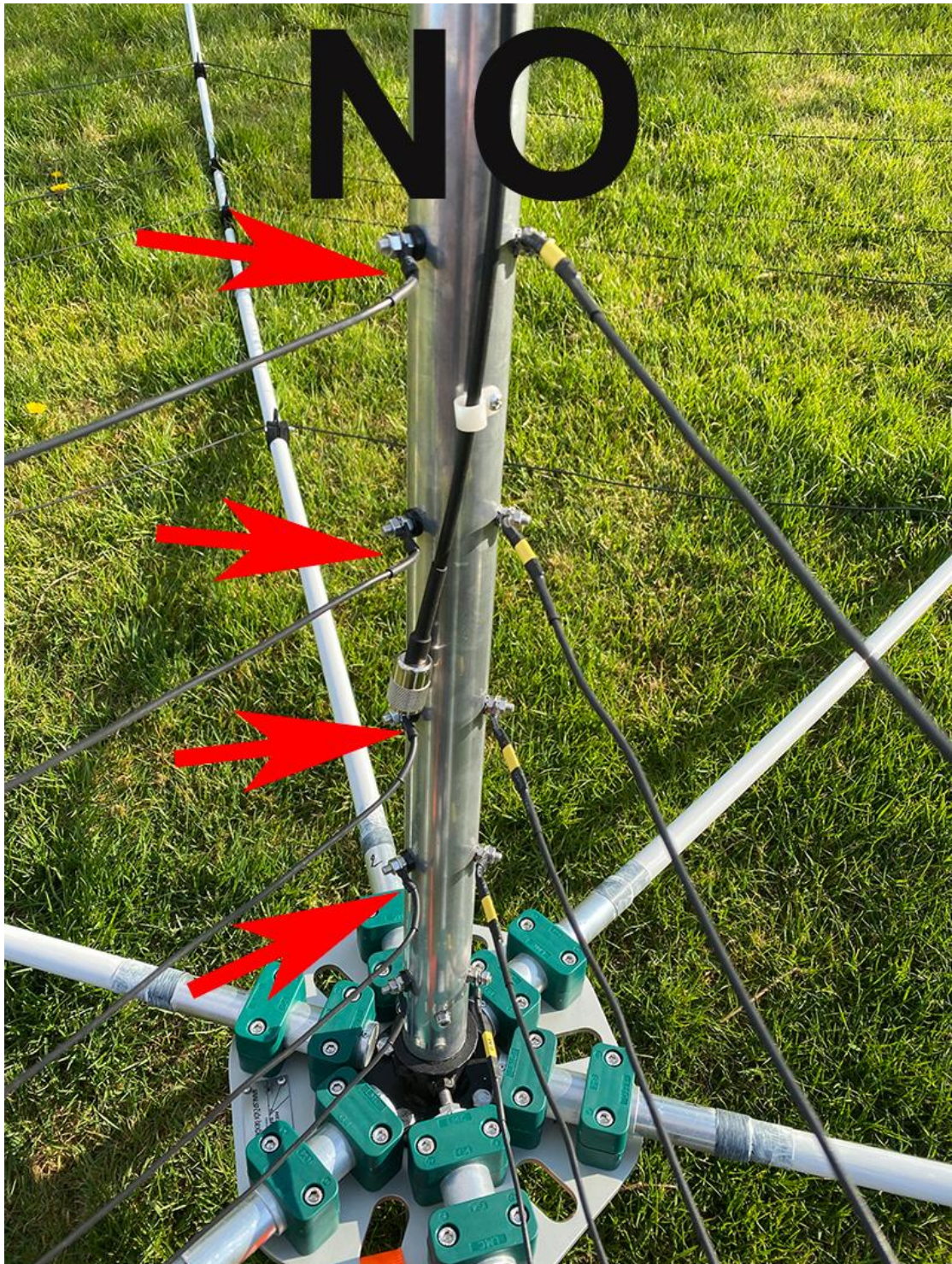


Pay attention to the type of applied washer!

Pay much attention during this stage - electric lines cannot be overtightened. You need to feel that they're a bit loose when you touch them, they need to hang down to avoid their breakage during strong wind or snow. To correct the lead tension - loosen or tighten one of the lead holders, two or three pieces - this doesn't affect proper operation of a given band. When the heights and clearances of the fixed holders are set - mark those points with a marker and wind 2-3 rolls of insulation tape in order to minimize potential backlash- (option).









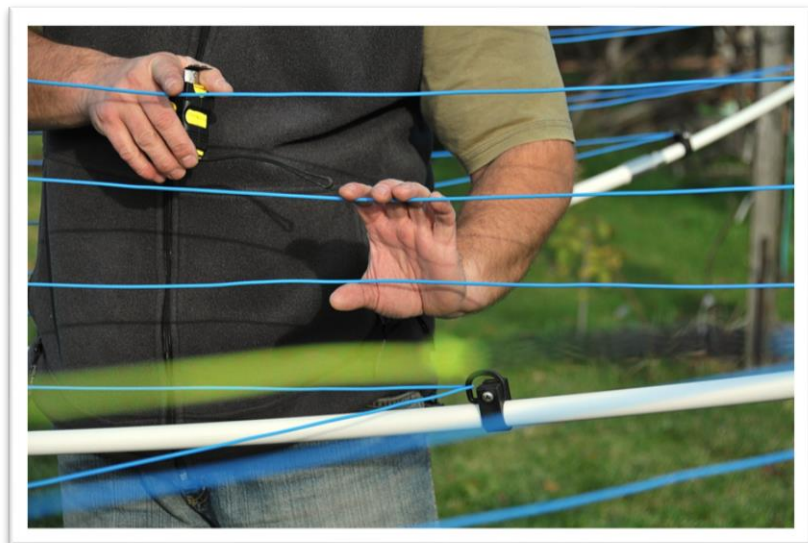






There needs to be a small backlash, the lines should hang down a bit. DO NOT TIGHTEN THEM !!!





DO NOT MAKE THE WIRES TOO TIGHT.

Also too loose and the wire will drop down and touch the wire below. This is also not good and will cause the SWR of those two to not be right. You want to keep the spacing between wires.

Remember taut wires might look better but it can cause the wire to stretch. It is better to have the wires just a slight bit slack than too tight.





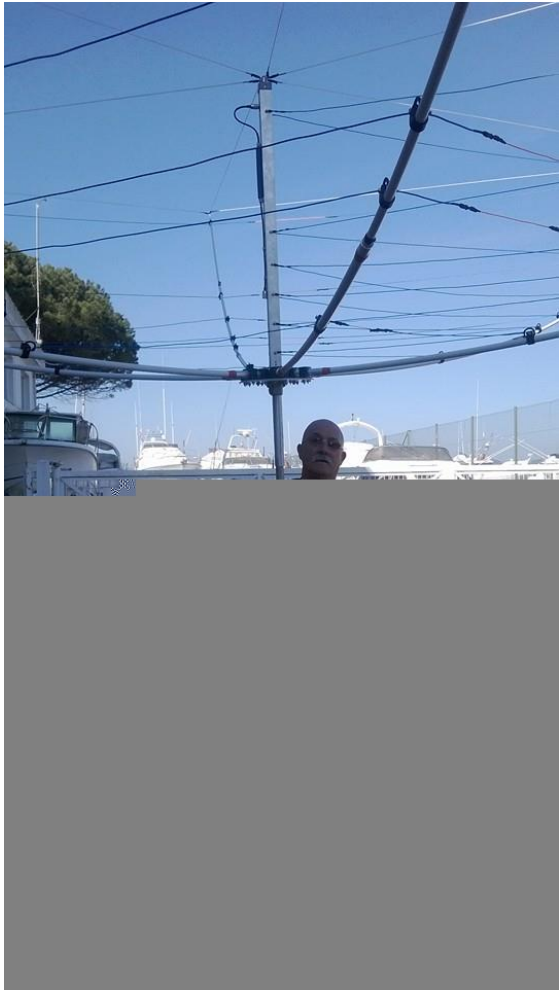
This is how properly bent poles look like





HEXBEAM SP7IDX TECHNOLOGY is very light





Step 5.

When the assembly of the antenna is over place it on a mast or other structural work.

Please see exemplary installations on my website :

<http://sp7idx-hexbeam.eu/hexbeam/mounting-suggestion>

Depending on the target height of the antenna it is advised to use at least one pair of guy ropes which will stabilize the whole structure. The antenna can be easily assembled with a stand or a chair with an opening inside or even a big bucket .

WARNING!

Used in moderation its high power amplifier, do not exceed the allowable power and uses it in moderation

Remember the antenna has been tested normal balun to 1500W PEP and continuous 1300-1400W

Abuse of too much power can cause permanent damage to the antenna especially in the aggressive environment - high humidity and high salinity

WARNING!

if you live or you are using an antenna in a very aggressive environment of salt water necessary to protect any electrical connection

I use and recommend :

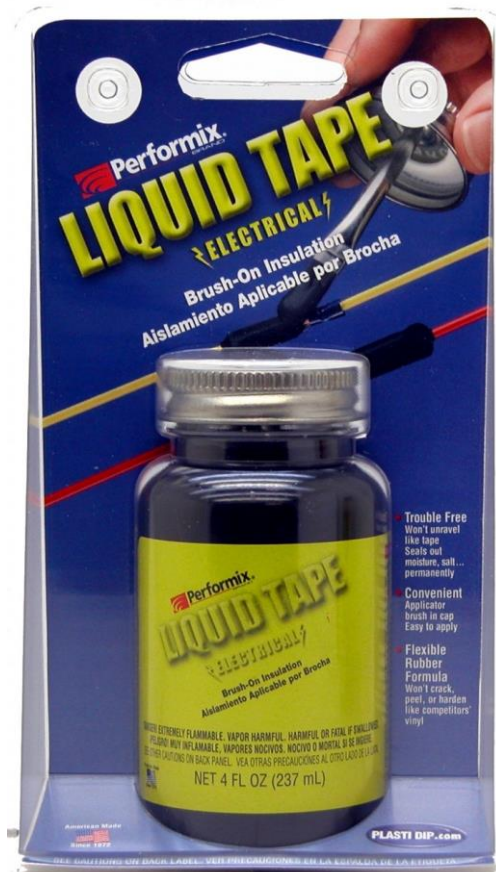
Liquid Electrical Tape for connections that I can not wrap with the rubberized tape 3M super 33+ --- especially as you live close to the sea and the ocean where it is very aggressive marine environment and high salinity!

WARNING!

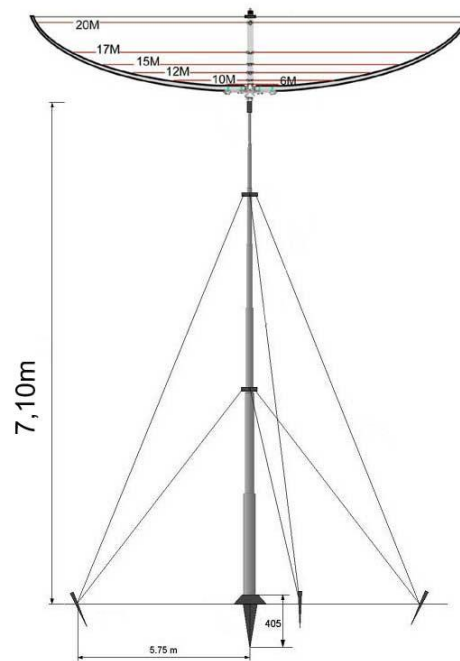
if you live in a region where there is a strong sun, propose to additionally protect the UV paint with poles

look how it was done here:

<https://www.youtube.com/watch?v=6-4p00EaCRM>

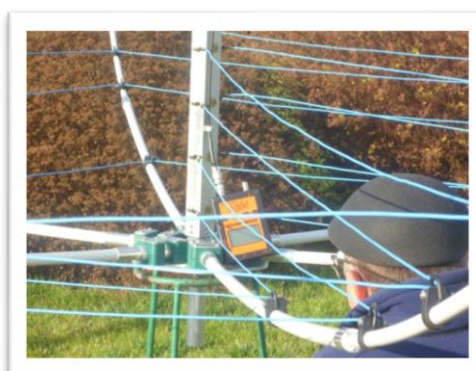


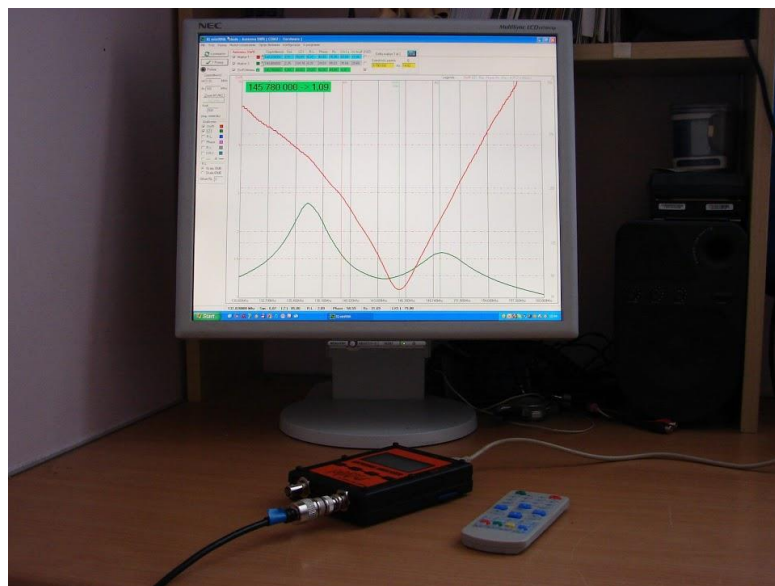
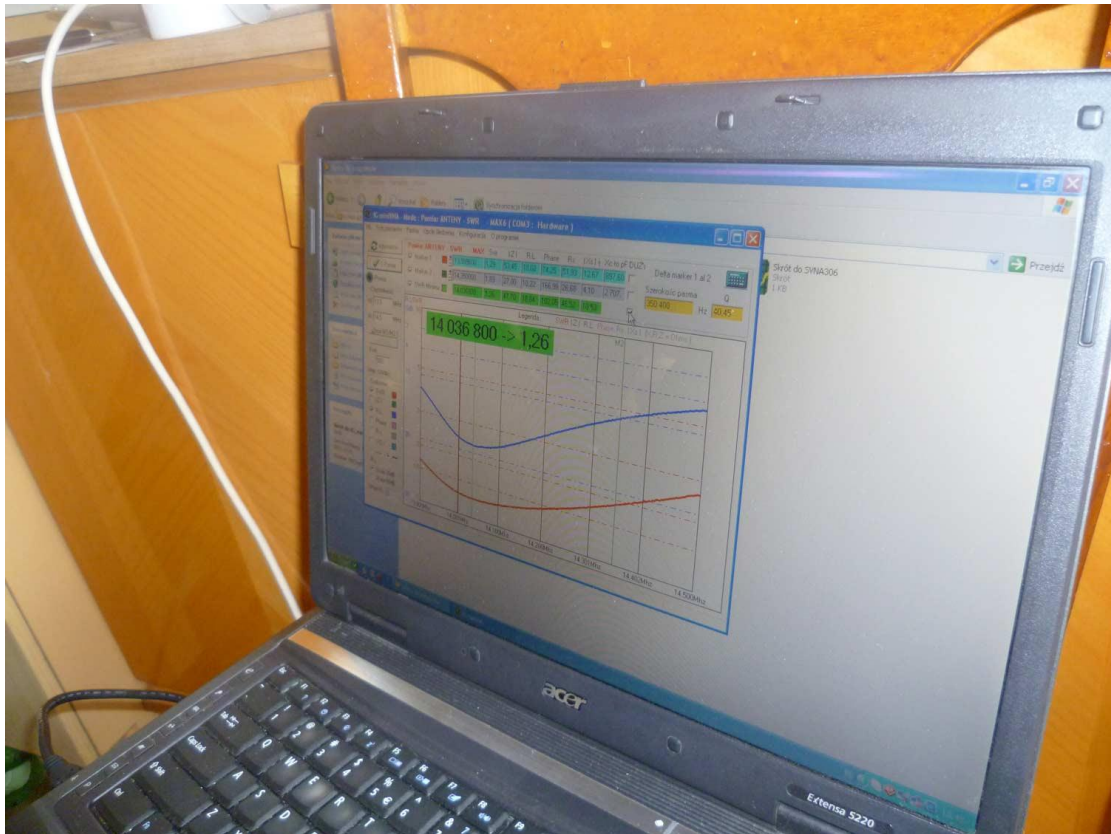
For the purpose of outside operation there is a special small mast for HEXBEAM of 7,10 m length.





For tests and antennas control - MAX6 antenna analyser





Both products are included in my offer on my website, you're welcome to visit it.

The photos can differ a bit from the actual structure due to implemented structural improvements.

If you have any additional questions or think that the structure should be changed or improved, please send me a message.

This antenna is designed to operate on the Amateur Radio Ham Bands of 6m,10m,12m,15m,17m and 20m. It is not designed to outside the amateur bands. DO NOT transmit, even with the aid of a tuner, outside the designed bands. This can cause excessive voltage and arching of the terminals on the center post and replacement is not covered by any warranty.

**That's it, the assembly is over.
Have a nice work with HEX-BEAM SP7IDX TECHNOLOGY**

**Waldi
SP7IDX**

sp7idx@interia.pl

www.sp7idx-hexbeam.eu





www.sp7idx-hexbeam.eu

Specifications HEXBEAM MARK IV HD or Light model

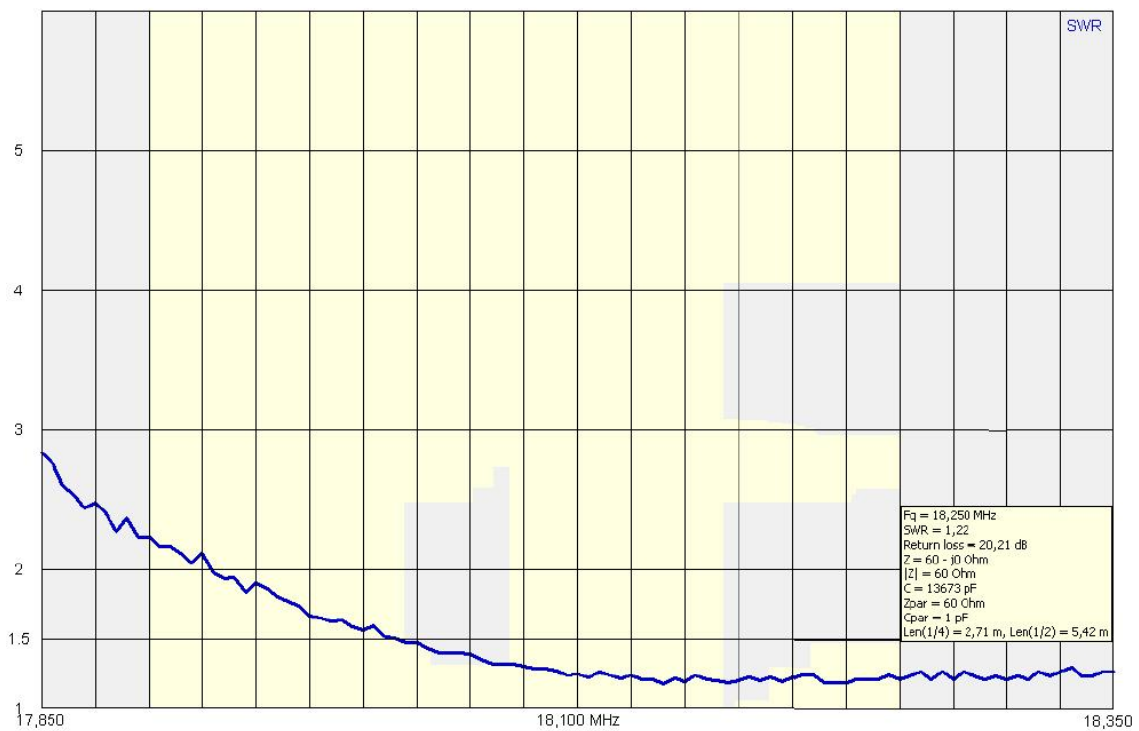
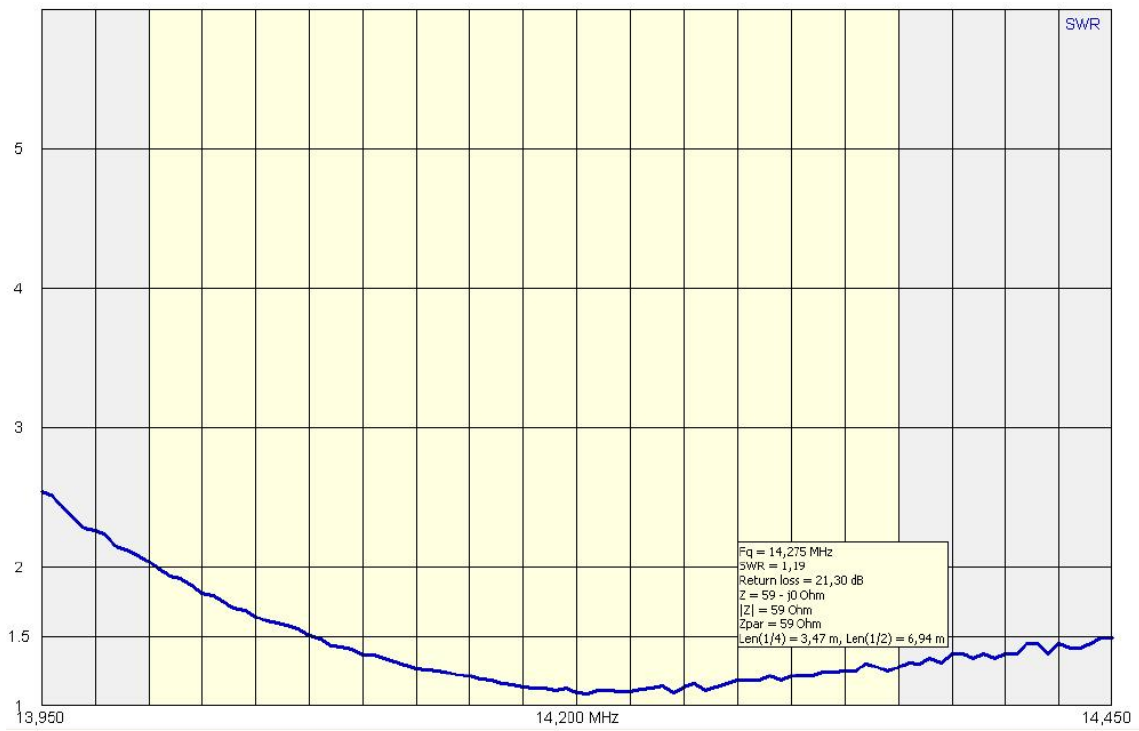
Amateur Radio Band -14 MHz -18 MHz -21 MHz -24 MHz -28 MHz -50 MHz

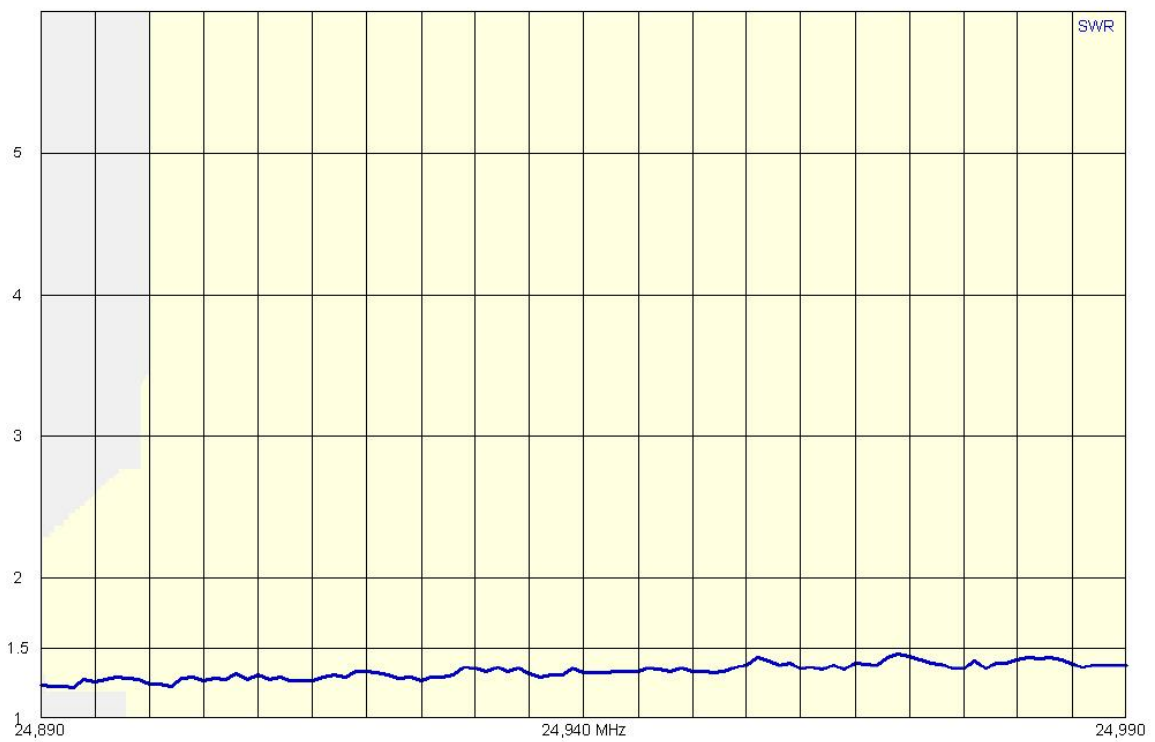
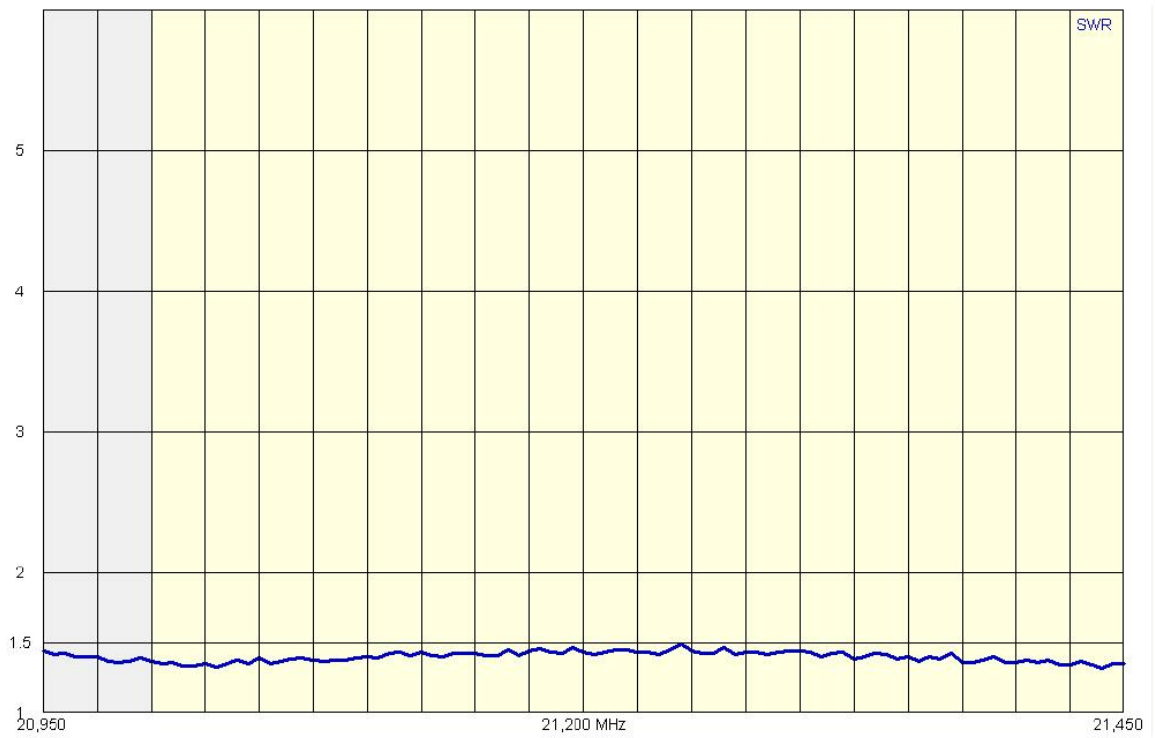
Frequency : 14 to 29,7 MHz

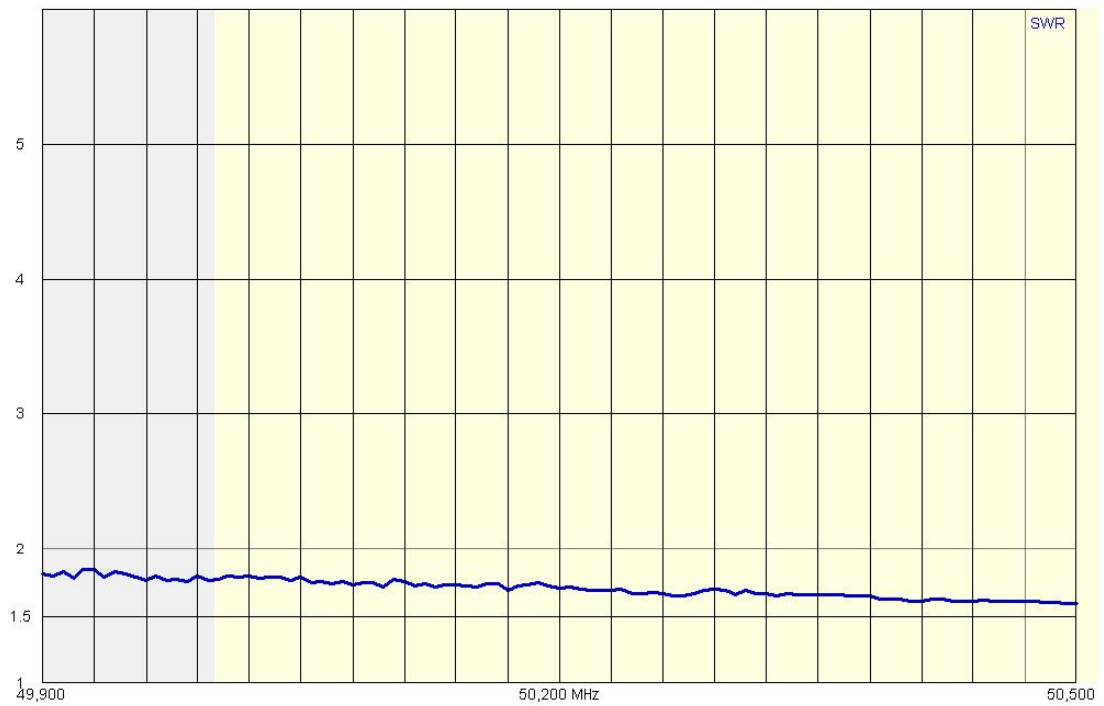
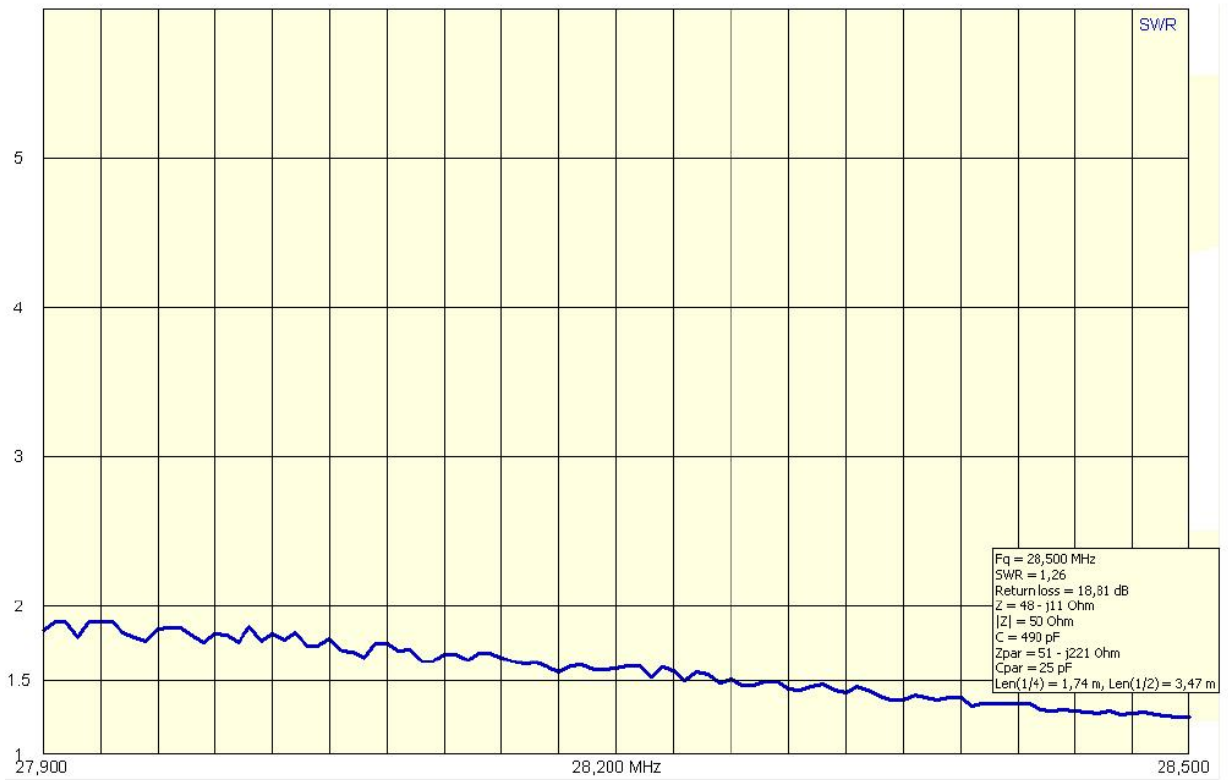
| | |
|---------------------------|---|
| IMPEDANCE | 50 Ohms |
| GAIN | Max-5-6 dBi in free space (3-4 dB over dipole) |
| F/B RATIO | Peak <23 dB (varies by band) typical |
| SWR | <2 over the entire band typ |
| Max. rotating radius | 3.26 m |
| Rated Power | 1500 W standard –optional balun above 1600W extra |
| Spraders | Professionally Fibreglass Spreader-very strong -(wall thickness 2,4mm) 2 x UV resistant |
| Support Cords | 3mm kevlar rope UV resistant |
| Center Post | Heavy duty centre post – pipe (aluminium 6063-T832) + Stainless steel pipe |
| Center Hub | 6mm aluminium 6063 |
| Mouinting Hardware | All screw , dial -Stainless steel HQ -1H18N12T |
| Other Plastic parts | Professionally Heavy duty polyamide element clamps |
| Connector | OS 239 connector or N type socket optional |
| Weight HD or Light model | Approx.:8-9,8kg |
| Wind testet | Real tested over 120-160km/h - 100mph Wind Loading Surface: +3.5 square feet typical |
| The Transportation Length | 136x28x14cm – 12 kg |
| Recommended Rotator | ALFA SPID model SPX Az-02 HD or SPX Az01 or model RAU , RAK |

Enclosed you will find my measurements with the RigExpert AA-1000 + Keysight E5061B ENA Vector Network Analyzer through 24,8 m Aircell7. Hexbeam was real 7 + 4,5m above the ground.

Remember that this beam is broad-banded so the SWR will remain quite low across each band – and well within range of most built-in antenna tuners in modern transceivers.



























Warranty
Antennas HEXBEAM MARK IV HD and Light

*condition for receiving a plenary indulgence and full warranty!
if there is no opinion issued, the warranty tration right!
it is only 2-3 minutes devoted to me
Sorry to bother you but it is necessary.
not issue an opinion within may result in loss of warranty
- I'm sorry for that but it's only 2-3 minutes for me - thank you
<http://www.eham.net/reviews/detail/10554>*

What the Warranty Does Cover

1. Water ingress in the centre post - **Lifetime Warranty**
2. Centre post failure - **Lifetime Warranty**
3. Centre hub failure - **Lifetime Warranty**
4. Double flange failure - **Lifetime Warranty**
5. Spreaders & Support Cords - **Five (5) years**

What the Warranty Does Not Cover

1. Does not cover storm, wind, Ice or any weather damage
2. Does not cover general wear or tear
3. Does not cover accidental damage (mast falling over)
4. Does not cover Wire Elements (We will replace elements at a discounted price)
5. changes, dismantling inside the centerpost or integration into the antenna structure and its components will result in the immediate loss of the warranty

Warranty Terms & Conditions

1. Valid only with the original owner
2. Any items/parts due for repair will be posted back to us at your cost
3. Return postage will be at your cost
4. All parts/labour will be free of charge

Name-

Cal-

Date-